



SLEEP QUALITY, TEA CONSUMPTION, AND PERCEIVED STRESS AMONG YOUNG ADULTS

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Abstract: Young adulthood is a transitional phase in an individual's life, characterised by academic demands, social expectations, and lifestyle changes that can impact mental well-being. Factors such as sleep quality, perceived stress, and frequency of tea consumption may influence psychological health. The objective of the study was to assess perceived stress and sleep quality among young adults and to determine the association of sleep quality and tea consumption frequency with stress. A cross-sectional study was conducted among 150 young adults aged 18–25 years using quota sampling. Data were collected using the Pittsburgh Sleep Quality Index (PSQI), Perceived Stress Scale (PSS-10), and a self-structured questionnaire to assess tea consumption frequency. Chi-square test was used for statistical analysis, with significance set at $p < 0.05$. Moderate stress was reported by most participants (83%), with females showing higher stress levels than males. Poor sleep quality was observed in 64% of participants. A statistically significant association was found between sleep quality and perceived stress ($\chi^2 = 13.99$, $p = 0.0009$), with higher stress observed among those with poor sleep quality. Tea consumption frequency did not show a significant association with perceived stress ($\chi^2 = 3.36$, $p = 0.76$). The findings indicate that sleep quality plays an important role in perceived stress among young adults, whereas tea consumption frequency does not appear to significantly influence stress levels.

Index Terms - Lifestyle factors, Perceived stress, Sleep quality, Tea consumption, Young adults

I. INTRODUCTION

Young adulthood is a transitional phase marked by academic, social, and lifestyle changes that can influence mental well-being. Individuals aged 18–25 years often experience increased responsibilities and expectations, which may contribute to higher levels of perceived stress^[2]. Perceived stress reflects the degree to which situations in one's life are appraised as stressful and has been associated with adverse physical and psychological outcomes.

Sleep quality plays an important role in maintaining mental health, and poor sleep is commonly reported among university students due to academic demands, lifestyle irregularities, and psychosocial pressures^[3, 4]. Inadequate sleep has been linked to emotional disturbances, reduced coping ability, and increased stress^[5]. The relationship between sleep and stress is bidirectional, with poor sleep increasing stress levels and elevated stress further disrupting sleep patterns.

In addition to sleep, lifestyle factors such as tea consumption may influence stress levels. Tea has been associated with potential mental health benefits, although evidence remains limited^[6, 7]. Few studies have examined the combined association of sleep quality and tea consumption with perceived stress among young adults in the Indian context. Therefore, the present study aimed to assess perceived stress and sleep quality and to examine their association with tea consumption frequency among young adults. Understanding modifiable lifestyle factors such as sleep can guide preventive mental health strategies among young adults.

II. MATERIALS AND METHODS

Study Design

A cross-sectional study was conducted to assess the frequency of tea consumption, sleep quality and stress levels among young adults, between 18 and 25 years of age. This approach allowed the collection of data at a single time and also helped to identify the association between different variables.

Study Population and Sampling Technique

The study included young adults aged 18–25 years. A total of 150 participants were selected using quota sampling to ensure balanced gender representation. Socioeconomic status was assessed using per capita income and classified according to standard categories. Data was collected between August and October 2025 through direct personal contact.

Operational Definitions

Stress: Defined as the degree to which individuals perceive situations in their life as unpredictable, uncontrollable, or overwhelming; measured using the PSS-10.

Sleep Quality: Overall pattern of sleep, including duration, disturbances, and restfulness; measured using the Pittsburgh Sleep Quality Index (PSQI).

Tea Consumption: Type and frequency of tea consumed (black, oolong, green, milk tea), timing, and subjective effects.

Inclusion Criteria

- Age range- 18 to 25 years
- Not suffering from any known disease

Exclusion Criteria

- Individuals following a specific diet.
- People suffering from sleep disorders.
- Those on medications (sleeping pills, antioxidant supplements)
- Individuals with known substance abuse (alcohol, smoking)
- Those undergoing stress of examination/ any other short-term stress period.

Data Collection

Data were collected through structured questionnaires, distributed personally or filled out through phone interviews.

Data Collection Tools

Data were collected using structured surveys and validated tools. Sleep quality was measured using the Pittsburgh Sleep Quality Index (PSQI), which is a standardised questionnaire consisting of 19 self-rated items, assessing different aspects of sleep patterns such as duration, disturbances and overall sleep quality. Stress levels were evaluated using the standard Perceived Stress Scale (PSS-10), a tool used to measure perceived stress in an individual. This measured the degree to which an individual felt that their life was unpredictable, uncontrollable, or overloaded. A self-structured questionnaire was designed to identify the types of teas consumed (black tea, oolong tea, green tea, milk tea), frequency of intake, preferred timing of consumption, and mood changes post-consumption.

Statistical Analysis

Statistical analysis was performed using Microsoft Excel and SPSS software. Descriptive statistics were used to summarise the data. Associations between variables were assessed using the **chi-square test**, and a p-value of <0.05 was considered statistically significant.

III. RESULTS

A total of 150 participants aged 18- 25 years participated in the study. The demographic profile of the participants is presented in Table 1. The majority of participants were students (71%, n = 106) and most belonged to middle-income families.

Table 1 Demographic profile of study participants (N = 150)

Variable	Category	n	%
Age (years)	18–19	20	13.3
	20–21	46	30.7
	22–23	50	33.7
	24–25	34	22.7
Gender	Male	75	50
	Female	75	50
Occupation of participant	Student	106	71
	Working professionals	44	29
Education of the head of the family	Primary	2	1
	Diploma	22	15
	Honours degree	26	17
	Graduate/Postgraduate	73	49
Occupation of the head of the family	Professionals	59	39
	Technicians/Associate professionals	28	19
	Clerical workers	19	13
	Legislators/senior officials/managers	18	12
	Skilled workers/shop owners/farmers	7	5
	Plant & machine operators/assemblers	3	2
	Unemployed	6	4
Monthly family income (INR)	<10,000	2	1
	10,001–30,000	29	19
	30,001–50,000	46	31
	50,001–1,00,000	51	34
	>1,00,000	23	15

* INR = Indian Rupee.

† n = Number of participants.

The perceived stress scale showed that most of the participants experienced moderate stress (83%, n = 125), followed by low stress (10%, n = 15) and high stress (7%, n = 10). Gender-wise distribution showed that females exhibited a **higher percentage of high stress** (10.6%) compared to males. A statistically significant association was observed between gender and stress levels ($\chi^2 = 6.86$, $df = 2$, $p = 0.032$) (Table 2).

Table 2. Gender-wise distribution of stress levels among participants (N = 150)

Stress level	Female n (%)	Male n (%)
Low stress	4 (5.3)	11 (14.7)
Moderate stress	63 (84.0)	62 (82.7)
High stress	8 (10.7)	2 (2.6)

Chi-square test applied; $\chi^2 = 6.86$, $df = 2$, $p = 0.032$ (statistically significant).

The analysis of the Pittsburgh Sleep Quality Index (PSQI) revealed that 64% (n=96) of the participants had poor sleep quality, and only 36% (n=54) experienced good quality of sleep. Poor sleep quality was seen predominantly in both genders. There was no statistically significant association found between gender and sleep quality ($\chi^2 = 0.12$, $p = 0.73$) (Table 3).

To find the association between frequency of tea consumption and stress the chi-square test was performed. The results showed no significant association between these two variables ($\chi^2 = 3.36$, $df = 6$, $p = 0.76$).

Table 3. Gender-wise distribution of sleep quality among participants (N = 150)

Sleep quality	Female n (%)	Male n (%)
Poor sleep quality	48 (64.0)	48 (64.0)
Good sleep quality	27 (36.0)	27 (36.0)

Chi-square test applied; $\chi^2 = 0.12$, $df = 1$, $p = 0.73$ (not statistically significant).

A statistically significant association existed between sleep quality and stress ($\chi^2 = 13.99$, $df = 2$, $p = 0.0009$). Participants with poor sleep quality experienced higher levels of stress as compared to those with good quality of sleep (Table 4).

Table 4. Distribution of stress levels by sleep quality among participants (N = 150)

Sleep quality	Low stress (n)	Moderate stress (n)	High stress (n)	Total
Poor sleep quality	3	86	7	96
Good sleep quality	12	39	3	54
Total	15	125	10	150

Chi-square test applied; $\chi^2 = 13.99$, $df = 2$, $p = 0.0009$.

IV. DISCUSSION

The present study focused on assessing perceived stress among young adults and finding its association with sleep quality and frequency of tea consumption. The results indicated that the participants experienced higher moderate stress in day-to-day life with increased prevalence of poor sleep quality. A significant association was observed between poorer sleep quality and its impact on increased stress. These findings aligned well with earlier studies that have reported increased stress and sleep disturbances among young adults due to academic and lifestyle pressures [3, 4].

This study showed that females tended to experience higher perceived stress than males. Similarly, previous studies found that women usually reported higher levels of stress than men because they tended to be more emotionally involved in everyday situations and were often expected to handle multiple roles at the same time. This supports the need for gender-sensitive mental health interventions among young adults.

Irrespective of gender, poor sleep quality was seen to be predominantly high in both genders, which aligns well with previous studies among young university students [8]. Since there exists a lack of significant association between sleep quality and gender, it indicates that poor sleep quality is a common concern among young adults, probably due to irregular schedules, lifestyle factors and screen exposure.

The key findings of the study suggested a significant association between sleep quality and the level of perceived stress. This supports the well-known bidirectional relationship of stress and sleep, where poor sleep can increase stress levels, and elevated stress can further disrupt the sleep cycle. The results emphasise sleep quality as an important modifiable factor for stress management in young adults [5].

However, there was no significant association observed between the frequency of tea consumption and perceived stress levels. Although tea is known for its anti-stress effect, the current findings suggest that tea consumption alone may not influence stress. Differences in tea type, caffeine content, timing of intake, and individual sensitivity may explain the lack of association, indicating the need for further exploration.

From a primary care perspective, young adults commonly present with complaints related to stress, fatigue, and sleep disturbances. Early identification of poor sleep quality during routine primary care visits may

help in timely counselling and stress management, thereby preventing long-term mental health consequences.

Strengths and Limitations

The study used validated tools to assess stress and sleep quality and included an adequate sample size. However, the cross-sectional design limits causal interpretation. Self-reported data may be subject to recall bias, and tea consumption was assessed only by frequency, without considering quantity or type.

Public Health Implications and Future Research

The findings highlight the need to promote sleep hygiene and healthy lifestyle practices as part of stress management strategies for young adults. Future studies should use longitudinal designs to establish causal relationships and explore qualitative aspects of beverage consumption and other lifestyle factors influencing stress.

V. CONCLUSION

The present study indicates that there exists a high prevalence of poor sleep quality and perceived stress among young adults aged 18-25 years. Since there existed a significant association of poor sleep quality with increased prevalence of perceived stress, this shows the importance of sleep in influencing mental well-being. At the same time, findings also suggested that the frequency of tea consumption did not show a significant association with stress levels. These findings suggest that improving sleep quality and promoting healthy lifestyle practices may play a crucial role in stress management among young adults.

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